Effectiveness of a Structured Teaching Program on Knowledge and Practice Regarding Prevention of Postpartum Hemorrhage among Staff Nurses in a Tertiary Care Hospital, Indore

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ABSTRACT

Background: Postpartum hemorrhage (PPH) is a leading cause of global maternal mortality, with a significant burden in developing countries like India. Knowledge and practice gaps among staff nurses regarding Active Management of the Third Stage of Labor (AMTSL) significantly influence maternal outcomes.

Objectives:
1. To assess baseline knowledge and practice of staff nurses regarding prevention of PPH.
2. To evaluate the effectiveness of a Structured Teaching Program (STP) on improving these outcomes.
3. To determine the association between selected demographic variables and baseline scores.

Methods: A pre-experimental, one-group pretest–posttest design was conducted among 50 staff nurses in a tertiary hospital in Indore using purposive sampling. A validated knowledge questionnaire (30 items) and observational checklist (20 items) were used. Data were analyzed using descriptive statistics, paired t-test, and Chi-square test.

Results: Post-intervention, there was a significant improvement in mean knowledge scores (Pretest 14.26 ± 3.8; Posttest 24.62 ± 2.9; $t=12.54$, $p<0.001$) and practice scores (Pretest 12.45 ± 3.1; Posttest 22.34 ± 2.7; $t=11.92$, $p<0.001$). No significant association was found between demographic variables and pretest scores.

Conclusion: The Structured Teaching Program was highly effective in enhancing knowledge and clinical practice regarding PPH prevention. Regular in-service training and simulation-based practice are recommended to sustain nursing competency and improve maternal safety.

1. INTRODUCTION

Postpartum hemorrhage (PPH), defined as ≥500 ml blood loss following vaginal delivery or ≥1000 ml after cesarean section, accounts for nearly 27% of global maternal mortality (Say et al., 2014). Despite advancements, PPH remains a major cause of maternal morbidity and mortality in India, largely due to gaps in the implementation of evidence-based practices (Singh et al., 2021).

The World Health Organization (WHO, 2023) recommends uterotonics, controlled cord traction, and uterine massage as essential components of Active Management of the Third Stage of Labor (AMTSL). Staff nurses play a crucial role in implementing these interventions; however, studies reveal inconsistent knowledge and practice, partly due to inadequate and irregular training (Devi & Thomas, 2020).

Structured Teaching Programs (STPs) have proven effective in bridging knowledge–practice gaps. This study uses Kirkpatrick's model to evaluate the effectiveness of an STP on knowledge and practice regarding PPH prevention.

2. Objectives
1. To assess the pretest level of knowledge and practice regarding prevention of PPH among staff nurses.

2. To evaluate the effectiveness of a Structured Teaching Program on knowledge and practice.

3. To determine the association between selected demographic variables and pretest scores.

3. Methodology

3.1. Study Design
A pre-experimental, one-group pretest–posttest design was adopted.

3.2. Study Setting
The study was conducted in labor rooms, postpartum wards, and gynecology OT of a tertiary care teaching hospital in Indore, M.P.

3.4. Structured Teaching Program (STP)
A 90-minute STP based on WHO guidelines included:

Module	Content	Duration
1	Definition, magnitude, causes of PPH	15 min
2	Prevention strategies & AMTSL	30 min
3	Early recognition, blood loss assessment, management	20 min
4	Nurse's role, communication & documentation	15 min
—	Demonstration: cord traction & uterine massage	10 min

3.5. Tools
Tool I: Structured Knowledge Questionnaire (30 MCQs)
➢ Score range: 0–30
➢ Categories:
• Poor (<12), Average (12–20), Good (>20)

Tool II: Observational Practice Checklist (20 items)
➢ Score range: 0–20
➢ Categories:
• Inadequate (<10), Moderate (10–15), Adequate (>15)

3.6. Data Collection Procedure
➢ **Day 1:** Pretest + practice observation
➢ **Day 1:** STP session
➢ **Day 7:** Posttest + practice reassessment

3.7. Ethical Considerations
➢ Institutional Ethical Approval obtained
➢ Written informed consent taken
➢ Confidentiality maintained

3.8. Data Analysis
➢ Descriptive statistics
➢ Paired t-test
➢ Chi-square test

4. Results

3.3. Participants
➢ **Sample Size:** 50 staff nurses
➢ **Sampling Technique:** Purposive sampling
➢ **Inclusion Criteria:**
• Registered staff nurses
• Minimum 6 months of maternity experience
• Willing to participate
➢ **Exclusion:** Nurses on long leave

Table 1. Socio-demographic Characteristics of Participants (N=50)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	21–30	32	64.0
	31–40	15	30.0
	>40	3	6.0
Professional Experience	1–5 years	28	56.0
	6–10 years	16	32.0
	>10 years	6	12.0

Qualification	GNM	15	30.0
	B.Sc Nursing	35	70.0
Prior Training on PPH	Yes	18	36.0
	No	32	64.0

Table 2. Comparison of Mean Knowledge and Practice Scores (Pretest vs. Posttest) (N=50)

Variable	Pretest Mean ± SD	Posttest Mean ± SD	Mean Difference	t-value	p-value
Knowledge Score	14.26 ± 3.80	24.62 ± 2.85	10.36 ± 3.12	12.54	<0.001*
Practice Score	12.45 ± 3.10	22.34 ± 2.70	9.89 ± 2.95	11.92	<0.001*

*Significant at p < 0.001

Table 3. Levels of Knowledge and Practice (N=50)

Level	Pretest Knowledge n (%)	Posttest Knowledge n (%)	Pretest Practice n (%)	Posttest Practice n (%)
Poor / Inadequate	22 (44.0)	0 (0.0)	20 (40.0)	0 (0.0)
Average / Moderate	25 (50.0)	8 (16.0)	27 (54.0)	12 (24.0)
Good / Adequate	3 (6.0)	42 (84.0)	3 (6.0)	38 (76.0)

5. Discussion

The findings show substantial improvement in knowledge and practice post-STP. Nearly **84% of participants achieved good knowledge**, and **76% achieved adequate practice**, compared to only 6% in the pretest.

Results align with previous studies (Devi & Thomas, 2020; Kumar & Devi, 2022) demonstrating STP effectiveness.

Demographic variables showed no significant association with pretest scores, indicating universal training needs across all experience levels.

6. Implications for Nursing Practice

➤ Mandatory in-service STPs on PPH
➤ Regular simulation drills
➤ Strengthening adherence to AMTSL guidelines
➤ Continuous evaluation through audits

7. Limitations

➤ No control group
➤ Small sample size
➤ Short follow-up period

8. Recommendations

➤ Conduct randomized controlled trials
➤ Include larger, multi-center samples
➤ Assess long-term retention and real PPH outcomes

9. Conclusion

The Structured Teaching Program significantly improved staff nurses' knowledge and practice regarding PPH prevention. Regular competency-based training is essential to reduce maternal morbidity and mortality.

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